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First Annual Report of

The Colorado State Board for Vocational Education

FORT COLLINS, COLORADO

1917-1918

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First Annual Report of

The Colorado State Board for Vocational Education

FORT COLLINS, COLORADO

1917-1918

Letter of Transmittal

To His Excellency, Julius C. Gunter,
Governor of Colorado.

Sir: I have the honor to submit herewith the first annual report of the Colorado State Board for Vocational Education.

Very respectfully,

A. A. EDWARDS,
President.

Colorado State Board for Vocational Education

		Term Expires
HON. CHAS. PEARSON	Durango,	1919
HON. R. W. CORWIN	Pueblo,	1919
HON. A. A. EDWARDS, President of the Board	Fort Collins,	1921
HON. J. S. CALKINS	Westminster,	1921
HON. H. D. PARKER	Greeley,	1923
MRS. AGNES L. RIDDLE	Denver,	1923
HON. J. C. BELL	Montrose,	1925
HON. E. M. AMMONS	Denver,	1925

PRESIDENT CHAS. A. LORY } Ex-Officio
GOVERNOR JULIUS C. GUNTER }

C. G. SARGENT, Director

L. M. TAYLOR, Secretary — CHAS. H. SHELDON, Treasurer

Executive Committee

A. A. EDWARDS, Chairman

E. M. AMMONS — H. D. PARKER

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FIRST ANNUAL REPORT

of the

State Board for Vocational Education

The national vocational education law, known as the Smith-Hughes Act, was signed by President Wilson on February 23, 1917, but owing to our entrance into the great world war the three appointive members of the federal board for vocational education were not designated by the President until in July following. A month later the board organized and appointed its administrative staff, but it was late in August before any co-operation with the several states could be attempted.

In the meantime, however, following the passage of the federal law by Congress, the Twenty-first General Assembly of Colorado passed an act of acceptance, designating the State Board of Agriculture as the State Board for Vocational Education in this State. Under such circumstances the state board could undertake no definite work until after the federal board had organized and announced its policies. As soon as this was done, a state director was appointed for Colorado with the understanding that he should devote one-half of his time to the organization, supervision and direction of vocational education and the remaining half to work in rural school improvement.

The director began preliminary work about October 1, 1917, but before any existing classes could be approved or new ones started it was necessary to prepare state plans for the administration of the Smith-Hughes law in Colorado and submit these to the federal board for its approval. Before these were approved, fully one-third of the regular school year and nearly one-half of the fiscal year had passed. Our public schools had opened with their accustomed courses, not knowing what lines of vocational education would be subsidized by the state board, nor what the state and federal requirements would be. Under such circumstances the only thing the state board could do in order to use the federal appropriations available for this first year, was to connect up with certain vocational classes then in progress and try to secure such adjustments and modifications as could be made in the midst of the school year to make this work more nearly conform to the required standards, and to start a few new classes as opportunity afforded. This policy was pursued, but under the conditions indicated above, it was extremely difficult to inaugurate an entirely new system of vocational education requiring very different standards from those formerly used in this state. And it was largely due to the patience, forbearance and splendid spirit of co-operation displayed by the boards of education, superintendents and teachers in the schools with which co-operative relations were established, that our first year's work met with as much success as it did. The state board also expresses its deep appreciation to the federal board for its wise and generous interpretations of the federal act and to its

representatives, several of whom visited the State and gave valuable assistance in starting the work.

The first fiscal year under this law began July 1, 1917, and ended June 30, 1918, but in spite of the fact that fully one-half of the fiscal year had already passed before even a start could be made, still, at the close of the year, June 30, 1918, we made a creditable showing for the first year.

The enrollment and financial data given are taken from our reports for the fiscal year. The summer project work described in this report was completed about December 1, 1918, and brief reference is made to schools that have been approved for the current fiscal year.

GENERAL PROVISIONS OF THE SMITH-HUGHES ACT

The federal act provides for the appropriation of certain sums of money to be apportioned to the several states for the promotion of vocational education. These appropriations began with the fiscal year 1917, and increase from year to year until 1926, when they reach the maximum, and continue thereafter at the maximum rate. The law provides further that these funds shall be used, first, to promote the teaching of agriculture, trade, home economics, and industrial subjects which shall be of less than college grade, and which shall be designed to fit for useful and productive employment, persons over 14 years of age. These funds may be used only for the payment of salaries of teachers of these vocational subjects, and each dollar of federal money must be matched by a dollar of state or local money. Second, these funds may be used to aid and promote the training of teachers of agriculture, trade, home economics, and industrial subjects. This work is of college grade and here again each dollar of federal money must be matched by a dollar of state or local money.

Funds Available for First Fiscal Year

To promote the teaching of agriculture of less than college grade	$ 5,000
To promote the teaching of trade, home economics, and industrial subjects of less than college grade	5,000
For the training of teachers of agriculture, home economics, and trade subjects	5,000
Total for all purposes	$15,000

Since the General Assembly of Colorado made no appropriation to meet the federal funds, and to provide for the administration of the act in this State, practically all of the expenses of administering the Smith-Hughes Act have been met out of the maintenance funds of the Colorado Agricultural College, while local school districts and other co-operative agencies have likewise had to meet the federal allotments on a dollar-for-dollar basis.

AGRICULTURAL EDUCATION

The federal act necessitates the employment of teachers of agriculture on a twelve-months basis by schools that expect to receive reimbursement

from federal funds. It also requires that the students enrolled in the agricultural classes shall be given six months of supervised agricultural practice, either on a school farm or on the home farm of the pupils, but preferably the latter. Now nine months of regular school work, supplemented by six months of supervised project work during the growing season, robs these courses in agriculture of the suspicion of being "easy" or "snap" courses. This requirement for supervised summer work on the farms, makes it necessary to begin the projects early in the spring before schools are out and to continue the work to completion after the schools open in the fall.

For this first year, co-operative relations were established with four strong high schools, each of which is located in a rich and productive agricultural district. These schools had been successfully conducting classes in agriculture before the passage of this act, but not wholly in accordance with Smith-Hughes standards. The Greeley and Fort Morgan high schools, the Lamar Union high school, and the Logan County Industrial Arts high school were approved. Such adjustments as were necessary to make the courses more nearly meet the standards agreed upon between the state and federal boards were made from time to time as the work progressed. We were fortunate in not being altogether unfamiliar with summer project work, since the Extension Service of the Colorado Agricultural College had, for a number of years, been conducting its boys' and girls' clubs on the project basis, and the teachers of agriculture in these same high schools had acted as club leaders, some of their own pupils being enrolled as club members.

In spite of unusual conditions brought about by the war and resulting in a great shortage of farm labor, requiring many high-school boys to quit school to help with the farm work, and affording others this excuse, we

Class in agriculture, Fort Morgan High School

were able to have enough students enrolled in the agricultural classes to amply justify the courses in all of these schools. The classroom work was well and efficiently done, thanks to the splendid agricultural teachers in charge of this work, and there is no doubt but that agriculture was better taught, and that better results were obtained the past year than in any previous year.

In early spring, the summer projects required by the federal law were started and this part of the work was successful beyond our highest expectations. In taking up a project, the pupil undertakes a definite piece of work which has been fully outlined by the instructor. The parent consents to the undertaking and agrees to give his support and assistance. The pupil agrees to perform the work according to instructions, to keep a complete record of all work done, its cost, the total receipts and expenditures, and to make a final report to the teacher when the work is finished. The teacher is required to visit each boy once a week, if necessary and possible, to give him the instruction and suggestions he may need from time to time, and to see that the work is well and faithfully done.

The kinds of projects selected the past year ranged from raising a garden to many acres of farm crops under the tremendous stimulus for increased food production as a war measure. Usually a project consists of raising an acre or more of corn, potatoes, beans, sugar beets, wheat or some other farm crop. If an animal project, it may consist of raising poultry, pigs, calves or other live stock. One of the essentials of all projects is that they shall be paying propositions, mostly but not always, promising a financial reward for the pupil commensurate with the time and effort involved. Production and profit are the chief incentives for the

Laurence Miner, Fort Morgan High School, in his beet field

pupils, while the highest possible educational values and the development of character are the objects aimed at by the teacher in charge and the others who are responsible for the work. There were 125 pupils who engaged in project work the past summer. As might have been expected for this first year, at least, this work met with widely varying degrees of success. Several boys volunteered for military service. Others were caught in the draft, and of course all these had to leave their work unfinished. Some were unsuccessful because of unfavorable weather conditions. A few others made mistakes that cut down profits. In all these, and still other respects, these undertakings were very much like the big farming game as played by real farmers everywhere. It is only fair and just to add that the records prove that there were few failures due to indifference and willful neglect on the part of the pupils themselves.

A number of project outlines are here given that the interested reader may better understand how the work was conducted the past year.

Field of beans raised by Vernon Frohm, Fort Morgan High School

POTATO PROJECTS
Outlined by Roy J. Hale, Teacher of Agriculture, Fort Morgan High School

Purpose

The purpose of this project is to produce one or more acres of potatoes.

To aid in the increased production of food.

To encourage thrift on the part of the pupil.

To correlate the work in agriculture with some practical work at home.

Variety of Crop

Any standard variety, such as Early Ohio, White Pearl, Rural or Russet Burbank, may be selected.

Selection of Seed

Seed must be obtained from a reliable seed firm or from a local grower that has seed true to type. If the parent is a potato grower, home seed may be used.

Culture of the Crop

The pupil should have a thorough understanding of the culture of the crop as to the time of planting, care and cultivation, irrigation, etc. This knowledge is obtained from the class-room, and from outside reading. Ground should be selected that is adapted to the crop, and should be properly fertilized and prepared before planting. All work should be done by the pupil as far as possible.

Records

A record blank is furnished the pupil covering the following points: Variety, source of seed, date of planting, number of man and horse hours expended, all expense connected with the project, including labor; yield of crop, value, rent and net profit.

Credit for Work

For each 360 hours work expended on the project one unit toward graduation will be given. For a fraction of the above hours, a fraction of a unit will be awarded. In order to receive this credit the pupil must receive a grade of 75%, based as follows: 50% on field work, 25% on his record, and 25% on the exhibit made at the local fair. A complete record and the making of an exhibit are necessary to the receiving of any credit.

Lelia De Haan, Fort Morgan High School, who made a noteworthy success of her potato project

Potato Project of Lelia De Haan, 18 Years Old, a Junio... the Fort Morgan High School

Size of project—5 acres, irrigated land.
Variety—White Pearl.
Yield—1,833 bushels.

Value of crop		$2,200.00
(Local price at time crop was harvested)		
Cost of production	$143.65	
Rent, one-fourth of crop	550.00	
Total expenses		693.65
Net gain		$1,506.35

High school credit given, 1 unit.

NOTE: In addition to the above, and other farm work which she did for her father, this high-school girl satisfactorily completed and received credit for 52 lessons in typewriting during the summer months.

The practical side of a pig project, Fort Morgan High School

Poultry Project

This work was done under the supervision of F. A. Ogle, teacher of agriculture in the Greeley High School.

Poultry Project of Clarence Boyd, 18 Years Old, a Senior in the Greeley High School

Size of flock—50 hens.
Breed—Pure-bred White Wyandottes.
Duration of project—10 months, Nov. 1, 1917, to Sept., 1918.

Expenses

Feed:	
10 bu. wheat	$ 20.00
20 bu. oats	16.00
1300 lbs. corn	41.75
172 lbs. barley	3.30
200 lbs. bran	4.10
120 lbs. oyster shells	2.00
3 pkgs. Poultry Regulator	1.50
3 pkgs. Chick Food	1.50
Other Supplies:	
1 Incubator	5.00
Stationery	.20
Phone	.05
Advertising	.70
Eggs and freight	5.33
Water jugs	.20
Carbola	1.35
Total Expense	$102.98

Receipts

Eggs:		
November	36	$ 1.40
December	195	7.96
January	438	18.16
February	661	25.79
March	759	20.25
April	596	18.70
May	516	13.67
June	527	13.15
July	408	10.20
August	204	6.80
Eggs used	1102	30.44
Chickens sold and used, 29 cockerels, roosters and hens		31.56
Chickens raised and still on hand, 60; value		90.00
Total Receipts		$288.08

Receipts and increase in stock	$288.08
Expenses	102.98
Profit from fifty hens for ten months	185.10
Increase in stock	90.00
Cash received from poultry	$ 95.10
Gross returns per hen	3.70
Cash returns per hen	1.90

NOTE: Most of the work done on this project was done nights and mornings while the boy was in school and in no way interfered with his school work while school was in session nor his duties on the farm during the summer months. In addition to raising the poultry this same high-school boy had one of the best and most successful pig projects.

Results of a project in improvement of seed corn, school farm, Greeley High School

Tractor Project

Outlined by E. J. Hadsell, teacher of agriculture, Logan County Industrial Arts High School, Sterling.

One term's credit in Agriculture will be given for satisfactory completion of this course.

REQUIREMENTS

1. Student must learn to operate a tractor on the farm during the summer, working with the tractor itself at least two weeks.

2. Student agrees to study carefully such reference matter pertaining to tractors as may be supplied by the instructor.

3. Student must study his tractor carefully, learning the names, use, and operation of all its parts and be able to explain the same to his instructor who will visit him on his farm several times during the summer.

4. Student must keep a careful record of the expenses and receipts for his tractor during the entire summer. For this purpose secure an ordinary day book and arrange your record as follows:

Note: Complete directions are given for keeping an accurate account of work done, receipts and expenditures while project is in progress. These are shown in the project report given below.

Farm Tractor Report by Clayton Patten, Student, Logan County

Project started April 24, completed Oct. 24, 1918

Tractor Expense

Cost of tractor and plows at beginning of season	$1,315.00
Tractor supplies on hand	19.50
April 16th—Bought 100 gal. gas at 24c	24.00
April 16th—Bought 30 gal. oil at 43c	12.90
April 30th—Bought 5 gal. oil, $2.20; can hard oil, 70c	2.90
May 2nd—Bought 50 gal. gas at 25½c, repair bill disc shaft $5.50	18.25
May 2nd—2 trips for repairs $4.00, work on engine $2.80	6.80
May 8th—38 gal. gas at 25½c	9.69
May 9th—5 gal. oil $2.60; pail of hard oil $2.25	4.85
May 24th—100 gal. gas $25.50, 10 gal. oil $4.80	30.30
June 3rd—5 gal. oil	2.44
June 4th—134 gal. gas at 25½c, $34.17; barrel oil, $13.48	47.65
June 7th—Auto trips for shaft, $12.00; phone call, 35c; repair on shaft, $14.10	26.45
June 19th—50 gal. gas at 25½c	12.75
June 25th—50 gal. gas at 25½c	12.75
June 10th—100 gal. gas at 25½c	25.50
June 17th—Bbl. oil at 43½c	13.48
June 20th—Repair on engine, labor $16.00, piston rings $4.20	20.20
June 27th—100 gal. gas at 25½c	25.50
Aug. 1st—Can crater compound	3.75
Aug. 8th—50 gal. gas at 26c	13.00
Aug. 9th—Shaft pin	.15
Aug. 14th—10 gal. cylinder oil, heavy, at 53c	5.30
Aug. 21st—Repair on disc shaft bearing 75c, trip $1.00	1.75
Aug. 23rd—100 gal. gas at 26c	26.00
Sept. 1st—528 hours man labor operating tractor at 40c	211.20
Total expense	$1,892.06

Tractor Receipts

Operating silage cutter	$ 25.00
Breaking sod, 102 acres at $4.00	408.00
Plowing old ground, 93½ acres at $3.50	327.25
Discing and harrowing 30 acres at $1.50	45.00
Double discing 320 acres at $1.25	400.00
Value of tractor supplies on hand at end of season	3.73
Value of tractor at close of season, 80 percent of cost	1,052.00
Total receipts	$2,260.98
Net gain for season	368.92

Tractor Labor Record

April	14	Discing stubble	12 hours
"	16	" "	9 "
"	17	" "	10 "
"	18	" "	9 "
"	19	" "	12 "
"	20	Breaking sod	6 "
"	25	" "	13 "
"	29	" "	12 "
"	30	" "	10½ "
May	1	" "	5½ "
"	2	Discing and harrowing	9½ "
"	3	Plowing sod	6½ "
"	4	" "	12 "

Tractor Labor Record—(Continued)

May 6	Discing and harrowing	8½	"
" 7	" " "	4	"
" 7	Plowing sod	5½	"
" 8	" "	6	"
" 14	Plowing old ground	8½	"
" 23	Discing stubble	13½	"
" 24	" "	10	"
" 25	" "	8	"
" 31	Plowing sod	10	"
June 1	" "	17½	"
" 3	" "	12	"
" 4	" "	13½	"
" 5	" "	13	"
" 6	" "	16	"
" 15	Plowing old ground	11	"
" 17	" " "	12	"
" 18	" " "	13	"
" 19	" " "	13	"
" 20	" " "	9	"
" 21	" " "	7	"
" 22	" " "	12½	"
" 24	" " "	11	"
" 25	" " "	11	"
" 26	" " "	6½	"
" 27	Discing sod	½	"
" 29	" "	10	"
July 18	Plowing sod	11	"
" 22	Plowing old ground	12	"
" 23	" " "	9½	"
" 24	" " "	8½	"
" 27	" " "	10	"
" 30	Discing sod	13	"
Aug. 1	" "	7½	"
" 2	Discing stubble	10½	"
" 3	" "	8	"
" 12	" "	9	"
" 14	Plowing stubble	10½	"
" 16	" "	9½	"
" 20	" "	8	"
" 21	Discing stubble	11	"
" 26	" "	11½	"
Sept. 9	Filling silo	11	"
" 10	" "	10	"
" 11	" "	10	"
" 15	" "	12	"
	Total hours used	582	

Tractor Labor Summary

Total hours tractor was used in season	582
Total tractor expense	$1,892.06
Value of tractor and supplies at close of year	1,055.73
Net cost of tractor labor for year	$ 836.33
Cost of tractor labor per hour	1.44

Exact Cost of Tractor Operations

Record on 30 Acre Measured Field

April	20	Plowing	sod	6	hours
"	25	"	"	13	"
"	29	"	"	12	"
"	30	"	"	10½	"
May	1	"	"	5	"
"	2	"	"	12	"
"	6	"	"	10½	"

Total time plowing, 69 hours, at $1.44	$99.36
Total time discing and harrowing, 22 hours, at $1.44	31.68
Cost per acre for breaking	3.31
Cost per acre for discing and harrowing	1.05

Two different federal agents for agricultural education visited these schools the past year, one during the winter months who inspected the classroom work, and the other during the growing season who visited and inspected a large number of the summer projects. Both of these men spoke in the highest praise of all phases of the work, and pronounced it of a higher grade than most such work they had inspected and fully equal to the very best they had seen in any part of the country. It is indeed gratifying to feel that this part of our work has been so successful for our first year under the Smith-Hughes law, and it certainly reflects much credit upon the schools in which such good work was done.

Baby beef fattened by Fred Plumb, Greeley High School

Owing to the many difficulties enumerated at the beginning of this report, enough schools could not be found that could qualify to use all of the agricultural funds for the year, and the sum of $1,262.50 reverted to the government at the end of the year. Several schools might have qualified, and probably one or more others would have done so, had the state

board been able to employ a larger staff to supervise the work, but it was only possible for the first year to employ a director for half time and he was charged with the introduction and supervision of all lines of vocational education provided for under the law. But even as it was, we made a good showing for the first year, especially when it is remembered that some states in our group were unable to get their organizations perfected in time to use any of the government funds, while others used only a small part of the funds for the first year.

However, before the beginning of the present fiscal year on July 1st, more schools had already made application for state and federal aid in agriculture than this year's allotment of government funds would permit the state board to aid. Co-operation was continued with the same four schools, while the Montrose County High School and the Monte Vista High School were also approved, making six schools in agriculture for the current year. Several other schools have made application and have been placed on the waiting list. The state board is co-operating with them by helping them to revise their courses of study, and to secure proper equipment and standardize their work, so that when the classes meet the required standards the work can be approved and aid can then be granted when our funds will permit. The state director will visit these schools, inspect their work and give all possible assistance and when the work reaches the standards

Animal husbandry class of Greeley High School judging feeder steers

agreed upon by the state and federal boards, it will be approved. There is much interest now in the teaching of agriculture in the high schools in many parts of the State, and the funds now available are very inadequate to meet the needs in preparing young men to intelligently and successfully engage in Colorado's leading and most important industry, that of farming.

HOME ECONOMICS EDUCATION
Funds Available, $1,000

According to the federal law, home economics is included with trade and industrial education with the provision that a maximum of 20 per cent of the funds for trade, home economics and industrial education "may be used for home economics". The state board elected to use the maximum for this purpose and the sum of $1,000 was accordingly set aside for the first fiscal year. Since all town and city schools, such as are found in school districts of the first and second classes, now offer courses in home economics for all who wish to take them, and, further, since the allotment of $200 or $300 of federal funds to such schools would do little or nothing toward promoting this work in schools of this type, the state board decided to use all home economics funds to promote the teaching of home economics classes in consolidated rural schools. This seems to be a wise provision and our state plans for the year 1918-19 provide for a continuance of this practice.

With the limited funds available the first year, only two such schools could be aided. One of these was the Fruitvale Consolidated school near Grand Junction; the other was the Cache La Poudre Consolidated school near Fort Collins. Both of these schools had already started home economics classes, and while the requirements for these classes were not so high as is required for state and federal co-operation, still it was not difficult to adjust the work to meet these standards. Both schools had already employed well-qualified teachers, they added some necessary equipment, increased the time devoted to home-making subjects and were approved by the state board. A federal agent for home economics education visited one of these schools, and after a careful and thorough investigation, also approved the work. The other school did fully as efficient work, and both did remarkably well under the circumstances.

Home economics courses, like the others provided for by the federal act, are designed to meet the needs of persons over 14 years of age. Pupils are required to devote one-half of the school time each day to the study of home economics and closely related subjects, and the work required is of the most practical kind it is possible to give under school conditions. The girls are given very practical lessons in conducting household affairs. They are taught, among other things, how to prepare and serve, in the best and most approved way, the common articles of food that make up the daily fare in most farm homes, and to do this with food products that are already available, or that are easy to secure and that it is economical to use. They also learn how to can, dry and store food products for use throughout the year. They are also taught practical sewing, including the care and repair of their own clothing, the selection of materials and how to make these up into simple yet becoming garments for their own wear, and also for other members of their own households. They study simple home nursing, first aid, personal hygiene, home sanitation and many other home problems. In

short, they are learning some of the most valuable lessons in the art of housekeeping and home-making. All senior girls in these classes are required to make their own graduating dresses. Creditable exhibits were made of food products. They also had good exhibits of many articles of wearing apparel and other sewing as evidence that the work is functioning in the lives of the girls themselves. If anyone doubts the efficiency of this line of work as done in these two schools, he can have all doubts dispelled by visiting the schools in question, attending the home economics classes, conversing with the girls themselves, observing their appearance and behavior, and then visiting other schools of the same kind but which do not offer courses in home-making.

The Fruitvale school was very successful in serving noonday lunches to a large number of children who were transported to school in school vans and who could not, therefore, go home at noon for their lunches. These lunches were served at a low cost and this part of the home economics course was self-supporting. The mothers of many of the children regularly depended upon this service instead of sending cold lunches for their children. In this same district, many of the mothers, and some of the older girls who were not in school, came to the school at regular intervals to witness demonstrations or to listen to lectures on timely household topics by the teacher. It is interesting to note in passing that the federal board is encouraging and aiding the promotion of work of this type. Federal agents have already worked out a number of courses on various subjects. Each course consists of ten lessons and upon the satisfactory completion of any full course, a certificate is given. Such courses may be given one or two afternoons a week, and this kind of work is classed as "evening" classes, regardless of the time of day when the class meets. This work is also subject to state and federal reimbursement under exactly the same conditions that govern classes conducted in the evening. The state board is now preparing to offer some of these courses for farm women in the districts with which we are now co-operating.

The Cache La Poudre school likewise did excellent work in its sewing and in the conservation of food, which is still so important.

For the current school year, co-operation has been continued with these two schools, and a third one, the Sargent Consolidated school near Monte Vista, has also been approved. These three will use all of the federal funds available at this time. However, several other schools have made application for aid, and while there are no funds for any other school this year, the state board is giving all possible assistance in helping to improve and standardize their work, so that when it meets the requirements, it can be approved and aid can then be granted when funds will permit.

There is a large field in Colorado for home economics education of the kind herein described, and, for the most part, it is still undeveloped. We have over fifty consolidated rural high schools in Colorado, and we are able to co-operate with only three of them. The country girls of these and

other districts, many of whom will be the wives of the coming generation of farmers, are surely entitled to as good preparation for their life work as are the girls who live in the town or city. This splendid field for educational work of the most practical kind only waits for sufficient funds for its development.

In the agricultural and home economics classes conducted in co-operation with the state board, the schools are functioning in the home and community life of these districts in a much closer and a more vital way than they have ever done before. In the agricultural classes, the pupils not only study agriculture in the classrooms, but in addition they are required to practice what they have learned, and to do it on the home farm, encouraged by their parents and assisted by the teacher of agriculture who becomes a frequent visitor to the farms in his district, giving encouragement, helpful suggestions, and aiding his boys in the development of character, all of which helps to give such work high educational value. Under the old way of doing things, work for boys on the farm possessed little educational value, lacked proper incentives and often became mere drudgery, while much of the school work was impractical and uninteresting. This supervised summer project work seems to almost supply the missing link, and both farm and school work have been improved thereby.

Likewise, this work in these home economics classes is already making itself felt in the homes in these communities, where a better, richer and more wholesome and satisfying home life is sure to result. Our public schools have often been severely criticised for being impractical, and for their failure to meet and at least attempt to solve some of the daily problems that confront those with whom they deal, but such criticisms cannot be charged against these two types of work.

TRADE AND INDUSTRIAL EDUCATION
Funds Available, $4,000

Colorado educators generally are less familiar with trade and industrial education than with any other type of education provided for under the Smith-Hughes Act. Except in one or two of our larger centers of population, little attention has been given by the educators of the State, to the training of industrial workers. Our public school system makes no specific provision for this type of education. This is more due to the fact that the people of the State as a whole do not realize that we really have many conditions favorable for such schools and classes, rather than that such conditions do not exist. To be convinced that we do have a good field for this kind of education, one only needs to visit the Opportunity School in Denver to get needed information and inspiration on this subject; or to visit the great steel mills in the city of Pueblo, employing some six or seven thousand men, or the large mining and smelting centers in the State where many thousands more are employed in a great variety of occupations

whose needs for certain kinds of education our school authorities have not even yet discovered and for which our school system at the present time makes no provision at all.

As soon as our state organization for vocational education was perfected, tentative arrangements were made with School District No. 1, City and County of Denver, to use all trade and industrial funds for the then current year. A little later, the Denver School of Trades, and certain evening classes conducted in the Manual Training High School, and the Opportunity School, were approved.

There are a number of restrictions placed upon the use of trade and industrial funds. First, as stated in a preceding paragraph, 20 per cent of this fund "may" be used for home economics education. This took $1,000 of the $5,000 fund available. Second, the law provides, further, that at least one-third of the trade and industrial fund, if used at all, must be used for part-time schools or classes. There were no part-time schools in Colorado and it was not possible to start such work in the midst of the many difficulties encountered in organizing vocational education in the remaining portion of the first fiscal year. So one-third of this fund reverted to the government because our conditions would not permit its use. However, all of the remaining portion of the trade and industrial funds was used in co-operating with the City Schools of Denver. The School of Trades made certain changes in its courses, particularly in related subjects, and its work was approved both by the state board and also by federal inspectors.

While we were right in the midst of organizing this trade and industrial education, the War Department discovered a great shortage of trained men for certain lines of army service. Large numbers of men were imperatively and immediately needed, and the federal board was called upon by the War Department to assist, first, in the training of 15,000 radio and buzzer operators for the signal corps of the United States Army; and, second, to likewise assist in the immediate training of 200,000 mechanics and technicians for some 87 different occupations. The state director was appointed as special agent for war-training classes by the federal board and placed in charge of this work in Colorado. The most urgent requests were sent to the several state boards, and even direct to institutions of higher learning and to our larger city school systems, to give all possible help in training this large number of men who were needed to meet a great national emergency. Perhaps this was the first time in our history as a State, when our public schools have been called upon to aid the federal government in a time of great need. The response was immediate and generous, such as has characterized all war activities in our State. Several radio and buzzer classes were organized in the Manual Training and Opportunity Schools, some instructors were taken from other work and placed in charge of this, a director was employed, much equipment was installed, the campaign for the enrollment of drafted men was effective, and it was not long until radio

classes were meeting at nearly all hours of the day and also in the evening. The work was so well done that within a few weeks after their organization, men who received their only training in these classes were, in steadily increasing numbers, being inducted into the signal corps of the U. S. Army. By the close of the first fiscal year, June 30, 1918, more than 250 drafted men who had received their only radio training in these classes had been inducted into the service for which they had prepared.

The Denver Board of Education made a special appropriation to carry these classes through the summer of 1918, bought the new equipment at its own expense, and employed one of the best radio instructors in the country to direct the work. In addition to the radio classes, large classes in auto mechanics and other war-training work were organized, and many men from these were inducted directly into the "tank" service, transport service, or other lines of war work. So that by the end of June, when this report closed, more than 1,200 men had been enrolled in these classes conducted in co-operation with the Denver schools.

The state board co-operated in supporting this work in part from federal funds under its control, and everything possible was done to keep the enrollment at the maximum number that could be cared for. This work was continued without interruption until the armistice was signed on November 11th, after which the federal board wired the state board for vocational education to discontinue such work.

The state board is glad to express its genuine appreciation for this generous response and to highly commend the Board of Education of the City and County of Denver, Superintendent Carlos M. Cole, Assistant Superintendent Wm. H. Smiley, and their assistants, for their untiring efforts and for this most efficient service to both the State and Nation.

Besides the special war-training classes carried in the city of Denver, the University of Colorado, through its Extension Department, conducted radio and buzzer classes in Boulder, Pueblo, Trinidad and Grand Junction, in which 287 more drafted men were enrolled, many of whom were inducted directly into service. Colorado College and the Logan County Industrial Arts High School also operated radio classes. All of these institutions are likewise deserving of the highest praise, since they started their classes in response to the direct appeal of the Federal Board for Vocational Education, did the work wholly at their own expense and without any assistance from the state board.

Besides those enumerated above, there were certain other lines of evening work done in the Denver schools that were approved by the state board, such as mechanical drawing and other related instruction, but for which our limited funds would not permit financial co-operation. However, an unexpended balance of $280 from the home economics fund was applied on the home economics classes conducted in the Opportunity School.

A survey of the field for trade and industrial education in the city of Denver alone reveals the fact that it offers opportunities for many lines of trade education, and the number of wage-earning workers is constantly increasing.

The state board, with the assistance of the federal board, made a survey of the occupations and the opportunities for trade education in some of the largest metal and coal mining centers of Colorado, and found that here was a good field for many kinds of vocational classes. Almost without exception, the mine operators and superintendents were in favor of starting evening classes for the men in their employ, while the miners themselves seemed sufficiently favorable to warrant starting the work. The state board has already made tentative arrangements for classes of this kind.

TEACHER TRAINING
Funds Available, $5,000

As previously stated, the federal law provides for the training of teachers of agriculture, home economics, and trade subjects. Not less than 20 per cent nor more than 60 per cent of the total funds may be used for any one of the three teacher-training subjects named above, with the further provision that if any State fails to comply with the federal requirements for teacher-training in any one of these subjects by the year 1920, it will lose the whole allotment for that type of education until such teacher-training is provided for.

The state board elected to use 20 per cent, or the sum of $1,000, for the training of agricultural teachers; 60 per cent, or the sum of $3,000, for home economics; and the remaining 20 per cent, or $1,000, for the training of trade teachers, if it were possible to use it at all.

Teacher Training in Agriculture

During the past year all teacher-training in agriculture under the Smith-Hughes law was done at the Colorado Agricultural College at Fort Collins. Here again war conditions seriously affected attendance. Since, for years, the Agricultural College has required at least three years of military training of all its male students, the upper classmen in this institution were highly eligible for military service. Large numbers of these men, immediately upon our entrance into the war, entered training camps for army officers, some volunteered, others were caught in the draft, and this continued until but few men were left in the agricultural classes. And as a result of these and similar causes only nine men were left in the teacher-training classes in agriculture. These students were given actual teaching experience in the Colorado School of Agriculture, a school of secondary grade conducted on the College campus.

For years the Colorado Agricultural College has been training teachers of agriculture for the high schools of this and adjoining states, but the demand for such teachers has usually been greater than the supply. This

was largely due to the fact that agricultural college graduates could get much higher remuneration in other lines of work than they could in teaching agriculture in high schools. However, this year there was an unusual shortage of such teachers, and the inauguration of the Smith-Hughes agricultural schools and classes throughout the entire United States greatly added to the regular demand, with the result that salaries for such teachers have been brought up to a point where they compare very favorably with other positions. It is hoped that with the return of normal conditions once more a much larger number of young men will enroll in these classes.

Our six Smith-Hughes schools in agriculture were very fortunate in securing well-trained and experienced teachers for their classes.

Three of the four aided last year retained their teachers for the second fiscal year, but the fourth one, together with the two new ones approved for this year, found it necessary to employ new teachers, and all three of them had to go outside of Colorado to get them.

Teacher Training in Home Economics

All teacher-training classes in home economics for the past year were conducted at the Colorado Agricultural College, but in this case the enrollment in these classes was sufficiently large to afford excellent results. Here again these students were given actual teaching experience in the Colorado School of Agriculture. Each was given the entire charge of a class for at least twelve weeks. For a number of years the Agricultural College has met the requirements of the State Certification Act in its home economics classes. Graduates from these courses are eligible to receive a Colorado State Teacher's Certificate, and there is a large and increasing demand for such teachers in the high schools of this and neighboring states. These courses were modified somewhat at the suggestion of federal inspectors and the work was approved.

Twenty graduates of the class of 1918 met both the State and Smith-Hughes requirements, received state teachers' certificates and were placed in teaching positions. In all, 175 young women were enrolled in home economics teacher-training classes, and the entire sum of $3,000 was used in co-operating with this work.

At the present time, home economics affords a much larger field for teacher-training in this State than agriculture, since the schools in all first- and second-class school districts, and even some consolidated rural schools, teach home economics, while as yet only a comparatively few offer courses in agriculture.

SUMMARY

To make this report more complete, and show where the money was used, how it was used, and the number of students enrolled in each kind of work, a brief summary is given:

Agricultural Education

Schools aided:	Enrollment in Agricultural Classes	
Greeley High School	70	
Fort Morgan High School	41	
Logan County Industrial Arts High School	36	
Lamar Union High School	40	
Total enrollment for fiscal year 1917-18	187	
Agricultural funds available		$5,000.00
Total expenditures from federal funds		3,737.50
Unexpended balance		$1,262.50

Home Economics Education

Schools aided:	Enrollment in Home Economics Classes	
The Fruitvale Consolidated School	21	
The Cache La Poudre Consolidated School	34	
The Denver Opportunity School	50	
Total enrollment	105	
Home Economics funds available		$1,000.00
Total expenditures from federal funds		1,000.00
Balance		$0,000.00

Trade and Industrial Education

Schools aided:		Enrollment	
The Denver School of Trades (Day School)	School of printing	5	
	School of carpentry	22	
Total		27	
Evening Classes	Manual Training High School	336	
	Opportunity School	864	
Total		1,200	
Trade funds available			$4,000.00
Total expenditures from trade funds			2,613.34
Unexpended balance			*$1,386.66

*$1,333.33 of this balance could not be spent because there were no part-time schools or classes in Colorado, and none could be organized for the first year.

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